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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/701,020

11/05/2003

Hisato Tokoro

Q78314

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23373

7590

10/20/2006

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EXAMINER

MAI, NGOCLAN THI

ART UNIT

PAPER NUMBER

1742

DATE MAILED: 10/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/701,020

Applicant(s)

TOKORO ET AL.

Examiner

Ngoclan T. Mai

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12-14 is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☒ Claim(s) 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Reissue Applications

1. Applicant is reminded of the continuing obligation under 37 CFR 1.178(b), to timely apprise the Office of any prior or concurrent proceeding in which Patent No. 6,312,494 is or was involved. These proceedings would include interferences, reissues, reexaminations, and litigation.

Applicant is further reminded of the continuing obligation under 37 CFR 1.56, to timely apprise the Office of any information which is material to patentability of the claims under consideration in this reissue application.

These obligations rest with each individual associated with the filing and prosecution of this application for reissue. See also MPEP §§ 1404, 1442.01 and 1442.04.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 10 recites "an R-T-B based" is indefinite because it is not clear what R and T are.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uchida et al., now "Uchida" (U.S. Patent No. 6,159,308) in view of Umehara et al, now "Umehara" (U.S. Patent No. 4,888,506).

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Uchida discloses an R-Fe-B-based, sintered permanent magnet comprising 27-34% by weight R, where R is one or more of rare earth elements including Y, 0.5 –2% by weight B and the balance Fe. The sintered permanent magnet preferably has an oxygen content of 0.3% by weight or less, a density of 7.56 g/cc or higher, a coercive force iH_c of 15 KOe or more and a maximum energy product $(BH)_{max}$ of 35 MGOe.

Uchida differs from the claims in that Uchida does not specifically teach the sintered magnet is the form of a thin arc segment magnet having a thickness of 1-4 mm and the value of an orientation $Br/4\pi I_{max}$.

Umehara teaches it is known to form R-Fe-B rare earth permanent magnet into plurality of arc segments and into radial anisotropic ring magnet for use in voice coil-type linear motor, col. 1, lines 44-57 and col. 2, lines 41-54. Umehara teaches the sintered permanent magnet is formed into cylindrical shape having an outer diameter of 99 mm and an inner diameter of 92 mm and length of 23 mm. The thickness of the permanent magnet is therefore 3.5 mm. Based on the prior art teaching it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the sintered rare earth magnet taught by Uchida into thin arc segment, radially anisotropic arc segment or radially anisotropic ring magnetic for use in applications where it is conventionally known to be used as taught by Umehara. As for the orientation $Br/4\pi I_{max}$ recited in claim 1 and an orientation $[Br// (Br)] \times 100$ as recited in claims 5 and 8: since the claimed and prior art products are identical or substantially identical in structure or composition the sintered permanent magnet taught by Uchida when formed into thin arc segment as taught by Umehara would inherently possess the orientation $Br/4\pi I_{max}$ value and orientation $[Br// (Br)] \times 100$ value as claimed. In re Best, 195 USPQ 430, 433 (CCPA 1977).

As for claims 3 and 8, Umehara also teaches the cylindrical magnet can be formed into a longer cylindrical magnet by bonding multiple cylindrical magnets, the length in the example is 72 mm, col. 7, example 2. Thus it would have been obvious to one skilled in the art that the arc segment magnet or ring magnet taught by Uchida be made to have axial length as taught by Umehara.

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As for claim 4 regarding the ratio of I(105)/I(006) since the claimed and prior art products are identical or substantially identical in structure or composition the sintered permanent magnet taught by Uchida when formed into thin arc segment as taught by Umehara would inherently possess the claimed ratio.

6. Claim 11 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Allowable Subject Matter

7. Claims 12-14 are allowed.


8. It is known to produce rare earth sintered magnet comprising after pulverizing, introducing a rare earth alloy into an organic solvent selected for a group consisting of mineral oil, synthetic oil, or vegetable oil, molding it in a magnetic field while preventing oxidation, removing the oil out of the molded product following by sintering and heat treatment, see JP06322469 A or Uchida et al. (U.S. Patent No. 6,159,308). It is also known to add oleic acid and oil comprising a mineral oil, synthetic oil, or vegetable oil to a rare earth permanent magnetic powder to provide a slurry with good fluidity and impregnation for molding, see JP 08130142 A. the rare earth magnetic product produced from the latter mixture although has improved $Br/4\pi I_{max}$ value and BH_{max} value over product produced from the former mixture, however it is still poorer than the product produced by the claimed slurry mixture not only in the $Br/4\pi I_{max}$ but also in the iH_c , see applicant's specification Table 1 for comparison. Nevertheless none of the prior art teaches slurry containing nonionic surfactant and/or anionic surfactant and there is no teaching in the prior art of method of producing rare earth sintered magnet by adding to the powder mixture a liquid mixture comprising 99.7-99.99 parts by weight of the above organic solvent and the balance nonionic surfactant and/or anionic surfactant.

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoclan T. Mai whose telephone number is (571) 272-1246. The examiner can normally be reached on 9:30-6:00 PM Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Ngoclan T. Mai
Primary Examiner
Art Unit 1742

n.m.